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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,419	02/28/2002	Masato Gomyo	81868.0045	6256

26021 7590 12/02/2004

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EXAMINER

JOYCE, WILLIAM C

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,419

Applicant(s)

GOMYO, MASATO

Examiner

William C. Joyce

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to the amendment filed March 1, 2004 for the above identified patent application.

1. The indicated allowability of claim 24 is withdrawn in view of the newly discovered reference(s) to Minakuchi et al. (US Patent 5,357,163). Rejections based on the newly cited reference(s) follow.
2. The Finality of the last Office Action is withdrawn. The amendment filed November 5, 2004 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita (JP P2001-295833) in view of Minakuchi et al. (US Patent 5,357,163).

Kita illustrates a hydrodynamic bearing arrangement having a thrust bearing member formed with dynamic pressure generating grooves (6,7) thereon, wherein the dynamic pressure generating grooves on a first surface are deeper than the grooves

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formed on a second surface. Note, Figure 8 of Kita illustrates the clearances (8a-8b) between the thrust bearing member and the housing.

Kita does not appear to illustrate the thrust bearing arrangement used in combination with a radial dynamic pressure bearing. However it was well known in the art to use the combination of a radial and thrust bearing in forming a rotary device for driving a hard disk drive (HDD). For example, Minakuchi et al. teaches a rotary device having both a radial bearing and a thrust bearing arrangement, wherein biasing means (15) urges the rotating member toward the fixed member. Note, Minakuchi et al. discloses the thrust plate having pressure grooves on both sides of the thrust plate (column 5, lines 4-16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the thrust bearing arrangement of Kita in combination with a spindle motor having a radial bearing and biasing means, as taught by Minakuchi et al., motivation being to provide a stable rotary device capable of driving a hard disk drive (HDD).

With respect to the limitations defining the bearing fluid (air or oil) and the groove pattern (herringbone or spiral), it was well known in the art to configure a rotary device as claimed. Official Notice is taken with respect to the bearing fluid and the groove pattern because it was notoriously known in the art to form a rotary bearing device for a hard drive having the claimed configuration.

With respect to claim 9, the prior art does not appear to disclose the groove having the smaller gap being in the range of about .8 to 2.8 times its gap space dimension. It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to configure the bearing device having the claimed range, since it has been held that discovering an optimum value of a resultant effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With respect to claims 23, the biasing means of Minakuchi et al. would urge the rotating side member toward the fixed side member.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (703) 305-5114. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on (703) 308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William C. Joyce